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353. *By Prof. H. T. Eddy, Cincinnati, Ohio.*—A cube slides down an inclined plane with four of its edges horizontal. The middle point of its lowest edge comes in contact with a small fixed obstacle and is reduced to rest. Find the direction of the impulsive reaction of the obstacle, and show that it is independent of the velocity of the cube and of the inclination of the plane. Determine also the limiting velocity that the cube may be on the point of overturning.

QUERY BY PROF. A. HALL.—“Observations on the motions of the sun-spots have also established the fact that the sun is not strictly a fixed body, around which the earth revolves, but that it has a motion of its own thro’ space.” *Physiography*, by T. H. Huxly, F. R. S., 2nd Ed., p. 365.

How can the above fact be determined by observations of the sun-spots ?

QUERY BY PROF. W. W. JOHNSON.—Let $u = \frac{\sin ax}{a}$.

Now if $a = \infty$, $u = 0$ independently of the value of x , therefore we should have $\frac{du}{dx} = 0$ when $a = \infty$. But we find $\frac{du}{dx} = \cos ax$ which is essentially indeterminate when $a = \infty$. What is the explanation of this paradox ?

NOTE BY WILLIAM HOOVER.—In Todhunter’s *Plane Trigonometry*, p. 142, Third Edition, 1864, we have the following problem :

Eliminate θ from the equations

$$(a+b) \tan (\theta-\varphi) = (a-b) \tan (\theta+\varphi),$$

$$\cos 2\varphi + b \cos \theta = c.$$

The coefficient of the first term of the left member of the second equation is omitted. The coefficient of $\cos 2\varphi$ is a .

This erratum is pointed out as Todhunter’s mathematical works are remarkably free from typographical errors.

PUBLICATIONS RECEIVED.

Meteorological Researches by WILLIAM FERREL. Part II. On Cyclones, Tornadoes and Water-spouts. Appendix No. 10—Report for 1878 of the Superintendent of the United States Coast and Geodetic Survey. Quarto. 95 pages and six plates. 1880.

American Journal of Mathematics, Vol. III, No. 3.

The papers in this No. are, A Method of Developing the Perturbative Function, by Simon Newcomb; On De Morgan’s Extension of the Algebraic Processes, by Miss Christine Ladd; On the Motion of a Perfect Incompressible Fluid when no Solid Bodies are Present, by Henry A Rowland; and, On certain Possible Cases of Steady Motion in a Viscous Fluid, by Thomas Craig.